IVview

Volume 1, Issue 1, July-September, 2005

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
Independent Verification and Validation Facility

The view from here...

I am pleased to introduce our first edition of the NASA IV&V Newsletter. We look forward to publishing

IVView quarterly, to provide information and insight. We hope that this publication will help our NASA Family and our West Virginia community come to know us better. I am very proud of the achievements of the IV&V Program and Facility, and I am especially proud of the fine team of civil service employees and contractors who work so hard together to ensure that NASA IV&V is contributing significantly to NASA's mission.

In this publication, you will meet some of the people who support our Pillars of Services, Research and Outreach, built on a foundation of excellence in facility and administrative management. We are all committed to meeting the needs of our customers and stakeholders.

Thank you for taking time to read about us. Please visit our web site (www.ivv.nasa.gov) or let us welcome you to our Facility in Fairmont, West Virginia, the flagship of the I-79 Technology Park.

Sincerely,

Nelson "Ned" Keeler

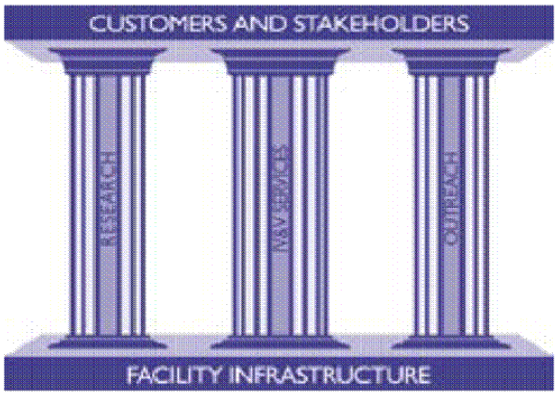

Table of Contents

Cover: Discovery dawn landing at Edwards Air Force Base

IVView is a publication of the IV&V Facility. It is published quarterly in the interest of IV&V employees, contractors and constituents.

Managing Editor: Donna Ozburn

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Please submit news items and/or photos to Kathleen.m.millson@nasa.gov ;304-367-8445. Ideas for stories and article submissions are welcome; all submissions are subject to editing.

Next Submission Deadline: December 15, 2005

Carrying the NASA Family Back to Space

Melissa J. Bodeau When Commander Eileen Collins and the crew of Discovery lifted off in July, they took the hearts and souls of the NASA Family with them. In NASA, few achievements are solely individual achievements. Most missions are the product of years of work by hundreds of people, each with a role to fill. Return to Flight was no different, and the IV&V team was proud to be a part of it.

IV&V's work on the Shuttle primarily involves the software in the onboard General Purpose Computers (GPC) and Multiple Function Electronic Display Systems (MEDS), in the Space Shuttle Main Engine Controller, and in the Miniaturized GPS Receivers flown onboard. For STS-114, we provided IV&V services on both the new release of flight software (OI-30) that would first fly on STS-114, and on flight-specific software changes. Our work on OI-30 spanned five years and three IV&V project managers; first, Bill Jackson (now our Facility's Deputy Director), then Steve Raque, and now me. Work on changes specifically for STS-114 had been going on for several months when I joined IV&V at the end of 2003.

The Shuttle Program has always had a series of reviews prior to launch to determine readiness. IV&V is a participant in the Software Readiness Reviews conducted by the Shuttle's Flight Software Office. For Return to Flight (and all subsequent flights), IV&V is also a participant in the Safety and Mission Assurance Readiness Reviews, conducted by the Agency's Chief of Safety and Mission Assurance (SMA). These reviews include representatives from all SMA organizations across the Agency that are involved in the Shuttle Program. When the Shuttle Program held reviews in mid-April for a mid-May launch, it was decided that more time was needed to be as ready as we wanted to be. We pushed the launch into July and conducted a new set of reviews in June, which gave us further confidence to proceed.

As launch day approached and throughout the mission, the local West Virginia media were frequent visitors to the Facility, interviewing Facility management and the Shuttle and ISS project managers. We were pleased to be able to talk to a wider audience about NASA and the work of the Facility.

For the long-awaited launch of Discovery, we gathered in a conference room with the TV picture projected on the pull-down screen and the volume turned up as high as possible. In the time between T-1 minute and T-31 seconds, the room quieted. As we hit T-6 seconds, Main Engine start, and then T-0 and Solid Rocket Booster (SRB) ignition, it became completely silent. As Discovery lifted off, I knew there were many others feeling and thinking the same things I was, mentally checking off each milestone and air-to-ground call, focused on my own little piece of the system, willing it to work and to keep the crew safe. The connection and community of the NASA family was almost tangible.

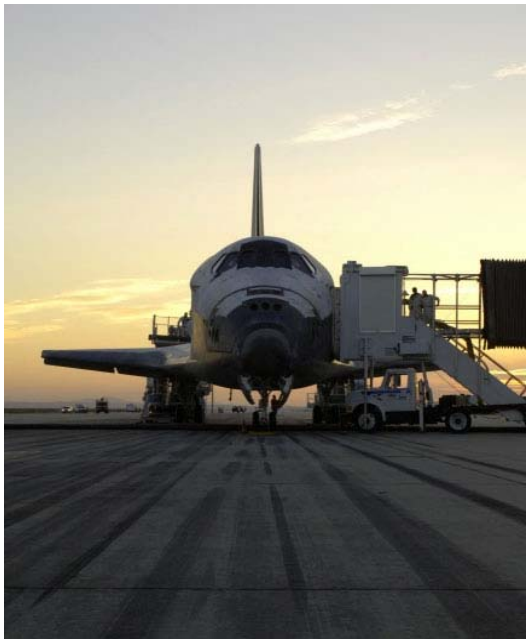
Once Discovery was safely in orbit, the work of assessing her condition and performing tests began. The crews of both Discovery and International Space Station photographed the Orbiter looking for damage as data was retrieved from the new sensors embedded in the vehicle. Based on analysis by experts on the ground looking at all the data, some tasks were added to spacewalks to remove protruding gap fillers to help ensure a safe return through the atmosphere.

IV&V SHUTTLE TEAM

Melissa J. Bodeau, PMP (NASA), Project Manager
John Bradbury, PMP (Titan), Project Manager
David Bradt (Titan), IV&V Technical Liaison/Sequencing/GN&C
Bimal Patel (Titan), GN&C
David Frazier (Titan), GN&C
Prasun Sinha (Titan), GPS
David Wirkkala (Titan), GPS
Heath Haga (Titan), GN&C
Gene McSwain (Titan), GN&C
Bill McAllister (Titan), DPS/GN&C
Leonard Frost (Titan), DPS
Fay Moore (Titan), DPS
David Soto, PMP (Titan), MEDS
Julius Marcus (GCS), SSMEC
Pat Wilhelmi (Titan), DPS/MEDS
Gary Carvell (GGC), MEDS
Ramona Gallardo (Titan), DPS
David Greeson (Titan), MEDS
Reid Brockway (Titan), Sequencing
Bruce Danielson (Titan), SSMEC
Larry Strader, PMP (Titan), GN&C
Jeny Hehir (Titan), IV&V Tools

As usual, the astronauts executed their work superbly throughout the mission and showed that the confidence we place in them is well-deserved.

Many of the staff at the IV&V Facility were fortunate enough to be able to watch the landing of Discovery with the Chief of Safety and Mission Assurance for the Agency, Shuttle astronaut, Bryan O'Connor. He was in Morgantown, West Virginia, to participate in our annual Software Assurance Symposium, which presents the results of NASA's research into improving software assurance. Bryan said that, watching the landing and listening to the various milestone calls, he was thinking about the software. He said that no one talks much about the software or the effort that goes into it because it works. Bryan recounted that on one of his missions, when coming in to land at Edwards there was a large cloud over the landing area blocking the crew's sight of the runway. When they finally popped through the cloud at 6000 feet, the software had gotten them precisely where they needed to be, no manual maneuvering required. He said he was sure that Eileen Collins saw the beautiful lineup of a perfect position, looking through the Heads Up Display, thanks to software.



We learned a great deal from Discovery's mission. Some of what we learned shows us we have more work to do on our external tanks, and thus we've delayed subsequent flights until we can perform the necessary analysis and make and test the changes needed. While the delay is of course a disappointment, it is the right decision. There is nothing more important than the safety of the crew and the public, and that is our paramount concern. Now, we face the potential of additional delays due to damage from Hurricane Katrina at our Stennis Space Flight Center and Michoud Assembly Facility locations. Our priority in the short-term is to help all those in the NASA family, both employees and contractors, who were affected by the hurricane. We'll assess the damage and come up with a plan to recover so that we can quickly continue with the steps needed to fly the Shuttle again.

Spaceflight is an inherently risky business. Those of us who work in space exploration have a responsibility to do everything we can to reduce the risks to the extent possible. The Shuttle IV&V team has the duty and the honor of directly contributing to the safety of the crew and the success of the Shuttle's missions. I, as part of that team, was filled with joy and pride to see Discovery and her crew soaring back into space, where we belong.

The Survey Says…

John Hinkle In late June, we surveyed all of our current (17) and recently completed (6) projects receiving IV&V Services. The surveys asked project representatives both quantitative, rating-based questions, as well as open-ended questions about their experience with IV&V.

We had a remarkable project response rate of 96% (22 of the 23 projects polled). Both in-progress and completed project customers responded to sets of IV&V performance and project manager rating questions on a scale of 1-4. Completed projects also answered questions on the overall IV&V service experience and on our "value-added" capabilities. The survey was conducted and the results analyzed by the Center for Entrepreneurial Studies and Development, Inc. of Morgantown, West Virginia.

On a scale of 1-4, nearly all of our customers rate us 3.5 in every area surveyed. Overall this indicates a high level of satisfaction with our IV&V Services and our management. So what's next? The survey report will be released to all members of our NASA family. We are now analyzing the individual project responses to glean the most from the information provided and respond accordingly. Of course, individual responses are held in confidence. We consider the results of this survey as the foundation on which to build a greater record of accomplishment.

Congratulations to all our NASA civil service and contractor personnel who continue to provide exceptional IV&V Services.

On the Job Training

Thomas Robinson & Kat Millson Because independent verification and validation is not taught or practiced in most colleges and universities, Project Manager Markland Benson envisioned and initiated a hands-on training program at the IV&V Facility. His training would be open to anyone who wanted to participate and would involve performing IV&V on a Knowledge Management System (KMS) test project.

Markland was soon joined by Deborah Kromis, the International Space Station IV&V Project Manager, and together they conceived of a more structured training program tailored specifically for new IV&V engineers and soon-to-be project managers. The concept was presented to Facility leadership who agreed that the best way to learn IV&V is to perform IV&V. The Facility Director, Ned Keeler and Deputy Director, Bill Jackson whole heartedly supported the initiative. Phillip Merritt, Aaron Wilson, Melissa Schmidt, Wesley Deadrick, Jeffrey Northey, Jerry Sims, Gerald Gilley, Brian Kesecker and Lisa Montgomery began meeting with Deborah and Markland with the primary objective of learning the practice of IV&V from the ground up by performing analyst duties.

In the fall of 2004 the development schedule for the International Space Station's (ISS) Regenerative Environmental Control & Life Support System (R-ECLSS) was accelerated. The ISS Oxygen Generation System (OGS) software became a target of opportunity for IV&V engineering training program.

Throughout 2005, Markland and Deborah worked with IV&V management to develop the ISS OGS IV&V project as a venue for training. They devised tutorials, compiled data, created hands-on exercises, and provided oversight. OGS IV&V currently includes software requirements evaluation and traceability analysis, interface analysis, design analysis and code analysis. The IV&V engineering group has uncovered ISS OGS software concerns ranging from 'severity-2' to 'severity-5'.

These concerns have been successfully communicated and accepted for action by the ISS OGS software development team. The IV&V Engineering Group has since created their own, internal competency management system which monitors how well everyone is learning and tracks the time spent working on individual tasks.

This unique IV&V training program has successfully provided a working knowledge of independent verification and validation of mission critical software under the exceptional dedication and mentorship of Deborah and Markland. The IV&V engineering group is highly motivated and engaged in real project work and the International Space Station receives additional IV&V on a critical software system, resulting in a genuine win-win for NASA and our IV&V Program.

Making the Grade

Last Spring, NASA IV&V Director, Ned Keeler, challenged the Project Managers at our Facility to hit the books. His hope was to see several of our talented project managers PMI certified as Project Management Professionals (PMP) in 2005 and 2006. Civil Service Project Managers and Contractors took Ned up on his challenge and the result is impressive.

*The Project Management Institute (PMI®) is the world's leading association for the project management profession. It administers a globally recognized, rigorous, education, and/or professional experience and examination-based professional credentialing program that maintains ISO 9001 certification in Quality Management Systems. *From the Project Management Institute Website.

Congratulations to the NASA IV&V civil service personnel who are now PMI certified as Project Management Professionals:

Melissa J. Bodeau; Stephanie Ferguson; Deborah Kromis; Thomas Robinson; Wesley Sweetser.

Congratulations to the contractors associated with NASA IV&V who also accepted and successfully met this challenge:

Titan: Bob Jarrett; Tina Mascaro; Larry Ullom; John Dicks; John Bradbury; Randy Hefner; Travis Dawson; David Soto; Khalid Lateef; Garlan Bradshaw; Larry Strader; Greg Miller;

GeoControls: Pavan Rajagopal

SAIC: Aria Whiston; Michael Hieber;

TMC Technologies, Inc,: F. Martinez; Lydia C. Sorenson.

Research Becomes Reality SAS '05

Lisa Montgomery Researchers from around the world gathered for the NASA Office of Safety and Mission Assurance (OSMA) fifth annual Software Assurance Symposium August 9-11, 2005, at the Lakeview Resort and Conference Center, Morgantown, West Virginia.

NASA's IV&V Facility has proudly organized the Software Assurance Symposium (*SAS*) to serve as the venue for the presentation of OSMA sponsored research for all of the five years of its existence.

The 2005 NASA OSMA *SAS* was the showcase of a year's worth of important research in the field of Software and Safety Assurance. The NASA Office of Safety and Mission Assurance sponsored the symposium as part of its Software Assurance Research Program (SARP) which is managed by the NASA IV&V Facility. As of the 2005 SAS, SARP research is being performed at seven NASA Centers/ Facilities: ARC, GRC, GSFC, HQ, JPL, JSC and at IV&V.

We were especially pleased that this year's *SAS* was held in conjunction with the Safety and Mission Assurance Directors' meeting. With Bryan O'Connor as keynote speaker, and the proximity and oft-times participation of the directors, this year's attendees enjoyed unprecedented opportunities for interaction with OSMA's leadership.

While *SAS* is widely known for its ambitious schedule of presentations, speakers, discussions and demonstrations, it also has a reputation for being a relaxed environment, conducive to initiating and strengthening relationships among national and international researchers and sponsors from throughout government, academia and the private sector. That reputation was certainly reinforced by the *SAS 2005* experience.

As balance to the research presentation, there was ample time for one-on-one and small group interaction during breaks and extended dinner conversations.

Participants found themselves watching and celebrating the landing of the Space Shuttle Discovery shoulder to shoulder with the OSMA Directors and *SAS* attendees from the European Space Agency (ESA) and the Japanese Space Agency (JAXA).

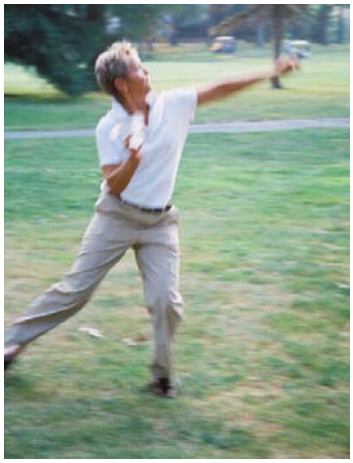
Bryan O'Connor, NASA Chief Safety and Mission Assurance Officer, (STS-61B and STS-40).

Originally brought to SAS in 2004 the Aardvark is now a SAS favorite among returning participants.

Office of Safety and Mission Assurance Directors gathered for a "class photo" and immediately returned to work. Their presence at the Software Assurance Symposium created an opportunity for meaningful dialogue with researchers.

As all work and no play makes for dull and cranky researchers, much needed breaks from serious subjects were provided throughout the symposium. The first tested the nerve and skill (not to mention sense of humor) of those who participated in the putting competition on the beautiful Lakeview golf course. Others conducted impromptu Return On Investment (ROI) studies by gambling against their fellow researchers at casino night. And former astronauts and academics alike proved they had "the right stuff" during a highly creative and competitive aeronautics competition.

The evaluations proved that *SAS* 2005 was an impressive event, the great camaraderie was further proof of its success.



Research Road Show

Lisa Montgomery The Software Assurance Symposium (SAS) is not only our showcase for the work we are doing, but it is also our primary venue to connect with our colleagues across the Agency to identify future challenges and explore ways to meet them. While SAS is a wonderful opportunity for attendees to learn about the topics on which our researchers have been working, not everyone who could benefit from the work that the Software Assurance Research Program is doing is able to attend SAS. To facilitate the transition of research into practice, the IV&V Facility will be working with other NASA Centers to bring the research, and the researchers, to them.

Prior to the Software Assurance Symposium, Ned Keeler, IV&V Facility Director, committed to supporting a research road show as a reflection of his determination to support the transition of research into practice. His decision to create such an effort now seems prescient. Post-SAS there is so much energy around Centers taking on greater involvement in the research program that it is apparent the timing of such an endeavor couldn't be better. Originally, we thought that we would send those researchers whose presentations, according to the SAS evaluations, generated the most interest. As conversations have taken place and more people have gotten involved, however, it has become clear that we will need to also expand that thinking to address the unique challenges of each Center.

The research program is only five years old; our work has not yet been around long enough to be a standard part of NASA's way of doing business. But it will be. The research road show will be a valuable part of making research a reality.

Dudley B. Killam, Operations Manager, Office of Safety and Mission Success, Jet Propulsion Laboratory

The 2005 Software Assurance Symposium at Lakeview was successful in a number of ways. In addition to the NASA IV&V facility's superb hospitality and software assurance focus, our 2005 SAS experience provided us with the inspiration to pursue at least two immediate goals here at the Jet Propulsion Laboratory. First, we are actively pursuing offering a mini-SAS here at JPL to provide greater insight into the project implementation significance of software assurance research on the part of compatriots who were not present at Lakeview this past summer. We are quite confident that this will be an important and natural investment in the future with high return assured by the effort.

Secondly, we are focusing on a partnership with other NASA family members on an innovative "collaborative infusion pilot" to involve software assurance innovations in developing and operational space projects. This pilot initiative should and will provide a valuable pathway of stepping stones linking creative research and pragmatic project efforts.

Summing things up from a SAS 2005 perspective, I have only to look at the fifth anniversary commemorative coin affirming the 'Research Becomes Reality' objective of SAS...something that we are doing throughout the NASA family in very natural way.

Martha S. Wetherholt, NASA Software Assurance Manager, Safety and Assurance Requirements Division, Office of Safety and Mission Assurance

I think the IV&V Facility has done an excellent job managing the NASA Office of Safety and Mission Assurance's Software Assurance Research Program (SARP) including the outstanding job of creating an informative, exciting, and interchange rich environment for our researchers and our customers. Each year the Software Assurance Symposium (SAS) has become better and more stimulating and our research and researchers better known.

My only complaint as the Headquarters sponsor is that I can't get to every one of the longer presentations, but that is the price of providing so much information in a reasonable time.

With the new idea of further infusing our research and making it available to the Centers by conducting a mini SAS at the Centers, our targeted research will reach more of the engineers and managers it is focused to help. Ken McGill, Frank Gmeindl, and Lisa Montgomery's efforts on both the research focus and the seminar have again produced an excellent SAS which has justly impressed our SMA Directors, visitors, and researchers. Keep up the great work!

Day in the Park 2005

Donna Ozburn NASA 's Independent Verification & Validation (IV&V) Facility, in collaboration with the West Virginia High Technology Consortium Foundation once again collaborated on its unique outreach event called "Day in The Park." On September 20, 2005 approximately 900 seventh graders from North Central West Virginia participated in hands-on activities and explored exhibits from "The Traveling Space Museum" of Los Angeles, California. "Day in The Park 2005" was designed specifically to encourage students to pursue careers in science, technology, engineering and mathematics (STEM).

Astronaut Paul Richards and IV&V Director, Ned Keeler with NASA Explorer School attendees. Students from 5 West Virginia counties attended this very special event including the 2005 NASA Explorer School (NES), Tucker Valley Middle School, whose students declared that this was "the best field trip they have ever been on!"

This year's guest astronaut, Paul Richards, shared his experiences with students in an inspiring story about his flight on STS-102 (March 8-21, 2001), the eighth Shuttle mission to visit the International Space Station. Mission accomplishments included the delivery of the Expedition-2 crew and the return to earth of the Expedition-1 crew. Paul performed a space walk totaling 6 hours and 21 minutes. He is currently the Goddard Space Flight Center Observatory Manager for the Geostationary Operation Environmental Satellite (GOES-R Series). The GOES-R series is the next-generation of advanced weather satellites being developed by the National Oceanic and Atmospheric Administration (NOAA) in partnership with NASA. His exciting presentation was repeated several times throughout the day as busload after busload of 7th graders arrived to meet him.

Students and their teachers participated in Space Suit demonstrations, water rocket launches, model helicopter flights, and a Lunar Utility Vehicle Rover demonstration. The Odyssey Spacelab and AstroJeopardy, were also on-site for student participation. In addition to "The Traveling Space Museum" exhibits, the West Liberty State College SMART Center and the IV&V Educator Resource Center (ERC) provided hands-on activities such as learning about magnetic fields and Mars topography.

But "Day in the Park 2005" did not end with the departure of the last school bus. This year the "Day" was extended just long enough to make it possible for the families of those who work at NASA and its neighbors at the Alan B. Mollohan Innovation Center, the National White Collar Crime Center and Lockheed Martin to experience the exhibits. It is especially delightful to see parents and children, grandparents and extended family members light up together with the wonder of discovery— proving that NASA's mission is big enough to inspire more than one generation at a time!

NASA and Upward Bound

Kat Millson The NASA IV&V Student Outreach Program hosted a NASA Day event on the campus of West Virginia State University (WVSU) in Charleston on July 12. The day was planned by the NASA Outreach Program and the WVSU NASA Liaison Office, with support from Goddard Space Flight Center and Langley Research Center. The day's events were specifically designed for over 200 Upward Bound students who were participating in a residential WVSU campus experience from throughout the southern counties of West Virginia.

The humidity was high and thunderstorms threatened as the students gathered in Ferrell Hall auditorium for welcoming remarks offered by Donna Ozburn, NASA IV&V Outreach Manager. Ms. Ozburn reminded all that NASA is the "ultimate upward bound experience."

Joe Kusimo, newly appointed WVSU Liaison to NASA, introduced WVSU alum Walter Flournoy. Mr. Flournoy, who had long dreamed of seeing a NASA event on the campus of his alma mater, told the students of his successful days as a shoe shine boy many years ago. His shoe shine business, in fact, was so successful that he did not plan to go to college at all until he heard from a buddy that the "gals on the WVSU campus were particularly beautiful." Whether that rumor proved true or not, he did build the foundation at WVSU for a career at NASA. A career that has spanned forty-four years, and brought him great success as an engineer and project manager at the Goddard Space Flight Center.

Dr. Ned Keeler, NASA IV&V's Director, took the podium to offer similar encouragement to the students. His remarks challenged the students to first believe in themselves and then pursue a great mission. "Of course," he concluded, "no where could a more exciting mission be found than that to fulfill NASA's vision for exploration."

West Virginia State University President, Dr. Hazo Carter, lent the full support of the University to the NASA Day events and offered his own encouragement to the students to follow their dreams by understanding their own power to do so. Quoting words from the movie "Coach Carter" that he selected as an inspiration for the students, he was moved to hear first one, then several, then all of the students join in to recite with him:

"Our deepest fear is not that we are inadequate. Our deepest fear is that we are powerful beyond measure. It is our light, not our darkness that most frightens us. Your playing small does not serve the world. There is nothing enlightened about shrinking so that other people won't feel insecure around you. We are all meant to shine as children do. It's not just in some of us; it is in everyone. And as we let our own lights shine, we unconsciously give other people permission to do the same. As we are liberated from our own fear, our presence automatically liberates others."

The participants left the auditorium to suddenly clear skies and the first of several events, organized by Valerie Graves, IV&V Student Outreach Manager. First on the agenda: an extraordinary Science Spectacular presented by Darryl Baynes. The presentation included a chemistry lesson conducted in the University's gym. The Science Spectacular concluded with an explosive finale.

The Engineering Challenge and Bottle Rocket contest that next took place were impressive displays of engineering and artistry. While one group launched their rockets to the sound of the cheers of teammates and competitors alike, the other group participated in an engineering challenge that required both teamwork and innovation. At the close of these events the NASA team was treated to yet another recitation by the Upward Bound students who quoted Invictus. (Although quoted in its entirety by the students, an abridged version appears here.)

"...I thank whatever gods may be
For my unconquerable soul...
I am the master of my fate:
I am the captain of my soul."
WILLIAM E. HENLEY

The day's events concluded with an assembly of all involved to celebrate the great success of the first of many such WVSU NASA Day events. President Carter's words with which he closed his remarks at the morning's assembly were on the minds of the entire NASA team as they left the beautiful West Virginia State University campus late in the afternoon: "We came here today to inspire you, but you have so deeply inspired us."

If You Build It...

Brian Kesecker If you've seen the movie "Field of Dreams" you know what can happen when preparation meets opportunity. Not long ago, National Oceanic and Atmospheric Administration (NOAA) was seeking the best place to house a National Weather Service Supercomputer. At the same time, NASA IV&V was enhancing its raised floor space in anticipation of just such a tenant. In 2004, NOAA decided to take advantage of the opportunity presented by NASA IV&V's preparation.

The IV&V Facility and NOAA engineers worked concurrently to further accommodate the requirements of the back-up supercomputer. From electrical power and temperature control to floor replacement and redundancy on the redundant system itself, the details of the layout were thoroughly analyzed, designed, tested, and implemented. Though minor corrections have been made since the installation date in early 2005, the supercomputer remains in constant operation.

The 2005 hurricane season has made the supercomputer especially critical, and it was put through the rigors of processing the data of the most recent destruction of a hurricane season that has taken us nearly through the entire alphabet of names. As the hurricane season continues, we are proud to provide a safe and appropriate environment that helps to protect NOAA's capacity to provide the most accurate and timely weather information possible.

It is envisioned that the capabilities of the supercomputer now housed at NASA IV&V will serve an increasingly vital role for our nation and the world. We congratulate our IV&V Facility operations and management team for the result of their hard work and preparation, and we are proud that NOAA chose to take advantage of the opportunity for this exciting partnership.

IV&V Lands a Rocket

Brian Kesecker In late August of 2005, IV&V landed a one of a kind, two-stage, sounding rocket that would be proudly displayed next to the flag poles that grace the front lawn of this NASA Facility in true launch style.

Why a rocket? And why here? After all, NASA IV&V is a Facility where the work of software verification and validation is done in quiet cubes. But we are surrounded by a community of young and old who seek us out as NASA's West Virginian face for the inspiration of the vision of exploration and discovery. Though our glass-fronted entry is attractive, it is a far cry from symbolizing the reach for the stars that is the very soul of NASA to the public. We are grateful to our partners at the Wallops Flight Facility (WFF) who understood and supported our desire to display such a symbol.

Associate Director of Operations, Greg Blaney, took on the challenge of locating this impressive lawn ornament , along with newly appointed IV&V Services Lead, Leigh Gatto, who just happened to come to us from WFF, home of NASA's Sounding Rocket Program. So this summer, Greg and members of his team made the trip to WFF with a flat bed truck and made the careful return journey through the Cumberland Gap with the rocket in tow.

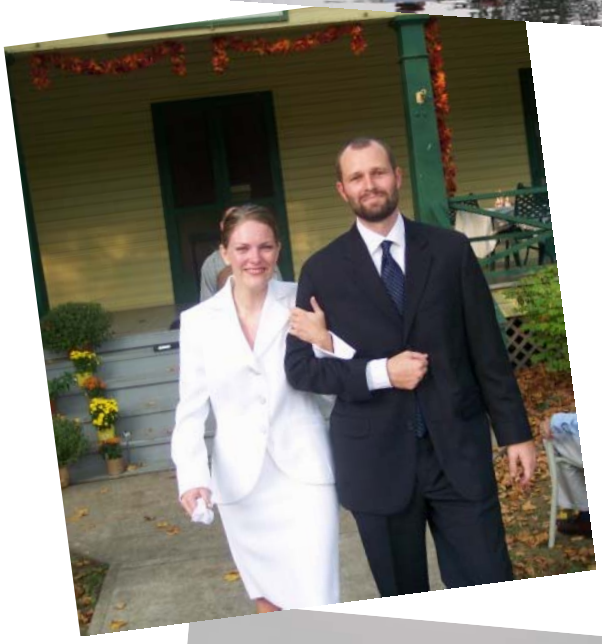
We are planning to complete construction and have the unveiling at the end of October, 2005, not long after this newsletter goes to press. We look forward to displaying the results of our handiwork (in pictures) in our next edition. We know that when members of our community travel past us on scenic I-79 or visit our Facility they will experience that momentary awe that we who work for NASA know so well when we catch even a glimpse of the wonder of rocketry that reminds us of our inspiring reach for the stars.

The Cube

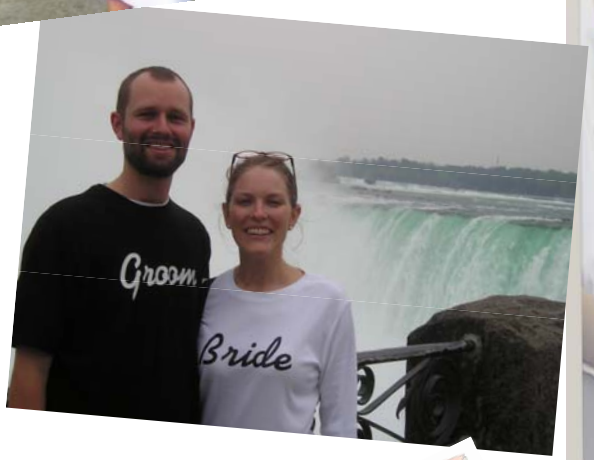
where you'll find our colleagues

And they say engineering isn't very romantic…

In September, two of NASA's IV&V Engineers, Melissa Schmidt and Jeffrey Northey married…



...each other!



The couple paddled their way to their ceremony and after a lovely celebration with family and friends, they left for a romantic honeymoon at Niagara Falls.
Both are back on the job, yet there remains a certain glow about the newlyweds.

Congratulations and best wishes to the Groom and Bride!

The Cube

Meagan Carrier

Rodney Queen has worked for ProLogic Inc. for three years. He serves as a support contractor for the NASA IV&V Research Team. Rodney's main duty is to maintain a database and web based management tool that the research team uses to organize and manage research projects. He also organizes quarterly reviews of research initiatives. Rodney has a very positive attitude and says "I'm constantly inspired by certain people here who come to work every day and do their jobs. They don't work for recognition, or just simply 'a paycheck', but do things the best they can, 'because the work needs done.'" Rodney's hobbies include fishing, hunting, reading and dog-rescues. Rodney is a resident of Preston County and is a member of Trout Unlimited, Best Friends Animal Rescue, Hacker's Creek Shooters Club and the Sierra Club.

Aaron Wilson is a NASA Civil Servant. He has worked at the Facility for nearly four years. Aaron's duties include evaluating emerging tools and technologies, providing code analysis services for numerous IV&V projects and serving as a research point of contact. Aaron is also a member of the Source Evaluation Board (SEB) for the new Tools Lab contract as well as a member of the NASA IV&V Engineer Group. At the Facility, Aaron coordinates the annual NASA IV&V ski trip and he has recently headed up the first ever NASA IV&V softball team. Aaron currently lives in Fairmont with his wife and two year old daughter. An avid outdoorsman, Aaron enjoys hunting, fishing, hiking and camping. His other favorite hobbies include football, volleyball, bowling and billiards. Aaron recently was the recipient of a NASA Special Act Award and says he is most inspired by a good challenge.

Matt Menas is an intern for SETA IMTS.

He has worked for SETA for three years. Matt's official title is Information Services Librarian for the NASA IV&V Facility. However, in his spare time he is also a senior at Fairmont State University majoring in Biology with a minor in Chemistry and Business. Last semester he earned the honor of being named to the Dean's List. Currently Matt resides in Grant Town, West Virginia. Matt also enjoys bowling and playing the guitar.

Old Friends

The L3 Titan Group's Enterprise IT Solutions Division is proud to have been providing IV&V and software assurance services to the NASA IV&V Facility through a series of legacy companies since the Facility was established. During those early years, space within the IV&V Facility was not at a premium, but the partnership among the supporting contractors, NASA, and the West Virginia community was. Although everything about our West Virginia NASA community has grown since then, L3 Titan Group's staff, corporate commitment, and dedication to assurance skills and integrity have been an integral part of our shared worklife.

Many IV&V business and research paradigms have been tested and improved over the past 10+ years as the Facility worked to mature the practice of IV&V. These improved practices coupled with the consistent values of professionalism and strong work ethic have elevated the work performed by the IV&V Facility to an international level. The Titan team is extremely pleased to have been an integral part of this successful growth and in the success of the projects which were the beneficiaries of the analysis the IV&V teams have provided.

This inaugural issue of *IVView* is only our first chance as a technical and social community to further recognize who we are, what we are doing, and where we are going in a more visible manner. We have not only grown out, we are growing up and becoming more self-aware of our NASA IV&V Facility organizational identity.

John Dicks

and New Friends

The Northrop Grumman Team is very pleased to be part of the NASA IV&V Team and to be part of the local community in Fairmont, West Virginia. We are excited to be here and to be working on our first two projects, the Phoenix Mars Lander and the Gamma Ray Large Area Space Telescope (GLAST).

Northrop Grumman is a large diverse aerospace corporation, with headquarters in Los Angeles, California. It consists of over 130,000 employee located around the globe. Northrop Grumman Information Technology is headquartered in McLean, Virginia, and its employees are a leading provider of advanced IT solutions for both government and commercial clients. We are very active in IV&V and in the IEEE 1012 activity.

Our IV&V Team consists of several West Virginia small businesses. These are: Action Facilities Management, Azimuth Inc., Integrated Software Metrics, KeyLogic Systems, MPL Corp., Mountain State Information Systems, Inc., and New-Bold Enterprises, Inc. Our large business teammates include EWA and L-3 Communications Government Services, Inc. The West Virginia High Technology Consortium Foundation rounds out our team.

Bill Koselka

Our Value-Ables

NASA IV&V Peer Awards

NASA IV&V CIVIL SERVICE EMPLOYEES

Greg Blaney	Melissa J. Bodeau
Kaci Reynolds	Shirley Simmons
Natalie Alvaro	Phillip Merritt
Meagan Carrier	Deborah Kromis
Delma Moore	Markland Benson
Steve Raque	Ken Vorndran
Melissa Schmidt	Aaron Wilson

IV&V CONTRACTORS

John Bradbury	Bryan Walker
David Soto	Rhett Livingston
David Greeson	Nick Hein
Bill McAllister	Gary Carvell
Jim Dalton	Chris Williams
Ramona Gallardo	Julius Marcus
Pat Wilhelmi	Michael Asbury
Nick Guerra	Susan Colbert
Ricky Forquer	Terri Keane
Bruce Danielson	Garlan Bradshaw
Reid Brockway	Kevin Hunt
Heath Haga	Penny Parkinson

NASA Space Flight Awareness Award

Congratulations to our colleague Don Ohi upon his selection as a recipient of the prestigious NASA Space Flight Awareness Award in recognition of his contributions to the Space Shuttle/Payloads program. He is being honored for leading the analysis effort on the special studies for the Centrifuge Accommodation Module (CAM) Centrifuge Rotor software and on the Timeliner script development process. A contractor for Titan Corporation, Don is the Deputy Project Manager for the Space Station IV&V Project. He has been a member of the NASA IV&V Family since 1998.

NASA Goddard Award

Pictured here with GSFC Center Director, Ed Weiler, Patrick Callis (right) recently received the prestigious Goddard Award of Excellence. Pat, an IV&V Project Manager, was honored for his efforts as an outstanding mentor.

Our Value-Ables

Kat Millson In 2004, poised on the edge of a second decade of existence, NASA IV&V set off on a course of review, revision and revitalization of its implementation plan. We restated our vision, mission, goals and objectives and fine-tuned our action plans—mapping them to the very core of NASA's vision, mission and strategies.

And then we conducted a survey to discern whether our team members believed that the organization and the individuals who serve NASA's mission were living up to our stated values. We discovered that we are indeed value able. We are a skilled and able team that is most effective, individually or organizationally, when conducting our work within the framework of our values of SAFTEY, RESPECT, TEAMWORK, BALANCE, EXCELLENCE, INNOVATION, INTEGRITY. Our survey was an honest one, and in some instances severely critical of ourselves. But consider the source—we are quintessential IV&Vers. We are ever conscience of faults, obvious and hidden, in any scenario.

And at the end of our first year of our second decade, we will ask ourselves again—Are we living up to our values? Success in such a subjective area is hard to define for an organization where good is never good enough and the best can be even better.